

Thoracic and abdominal segment sutures faintly represented. Seventh abdominal segment suture reduced to pockets. Abdominal segments 6, 7 and 8 almost of the same length, 42.5-45 microns long.

Vasiform orifice cordate shaped, 65 microns long and 60 microns wide; operculum subrectangular shaped, wider than long, 27.5 microns long and 45 microns wide, lingula tip exposed, 15 microns long, extruded out of operculum.

Ventral surface: Paired ventral abdominal setae 15 microns long and 55 microns apart, legs visible. Antenna not reaching beyond prothoracic legs, 80 microns long. Anterior and posterior abdominal spiracles, mouth parts and caudal tracheal fold discernible.

Material examined: Pupal cases mounted on two slides labelled "*Aleyrodes schizuokensis* Kuwana on *Oxalis* sp., 4.4.1929, K.S.L., R/7467; *Aleyrodes chizuokensis* Kuwana on *Oxalis* sp., 4.4.1929, K.S.L.,

R/7469".

Hosts: *Oxalis corniculata* (Kuwana 1911, Singh 1931); *Oxalis* sp. (Takahashi 1958); *Phyllanthus distinctus* (Rao 1958); *Sonchus oleracea* (Takahashi 1935).

Distribution: Pusa (Bihar) (Singh 1931); Hyderabad (Rao 1958); Japan (Kuwana 1911); Hawaii, Taiwan (Takahashi 1951).

ACKNOWLEDGEMENTS

We thank the Head, Division of Entomology, and Dr. (Miss) Swaraj Ghai, Systematic Entomologist, Indian Agricultural Research Institute, New Delhi, for the loan of the Aleyrodid specimens and thank the ICAR for financial assistance.

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October 7, 1987.

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32. REDESCRIPTION OF TWO WHITEFLY SPECIES (ALEYRODIDAE: HOMOPTERA) FROM BURMA (With six text-figures)

Two slides of aleyrodids labelled *Pealius kalawi* Singh and *Setaleyrodes takahashia* Singh, collected by Singh in 1933 respectively from *Laurus* sp. and *Streblus asper* at Kalaw (Burma) were obtained from the collections of the Zoological Survey of India, Calcutta, and studied. These two species are illustrated and redescribed in this paper as the earlier descriptions by Singh (1933) are inadequate.

Pealius kalawi Singh, 1933 (Figs. 1-3)

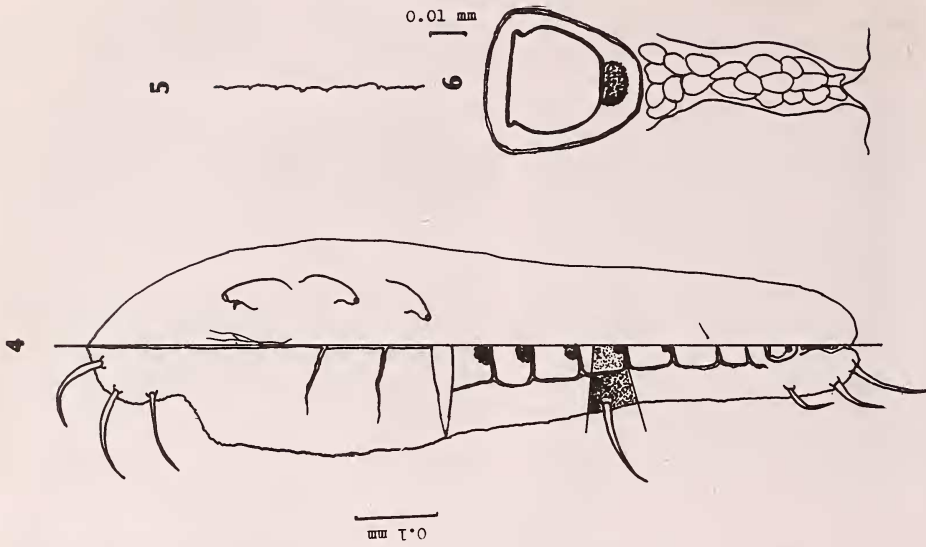
Pupal case: Elliptical, 0.612-0.857 mm long and 0.428-0.627 mm wide.

Margin: Regularly crenulate, 18-19 crenulations in 0.1 mm; thoracic and caudal tracheal pore regions not differentiated from margin.

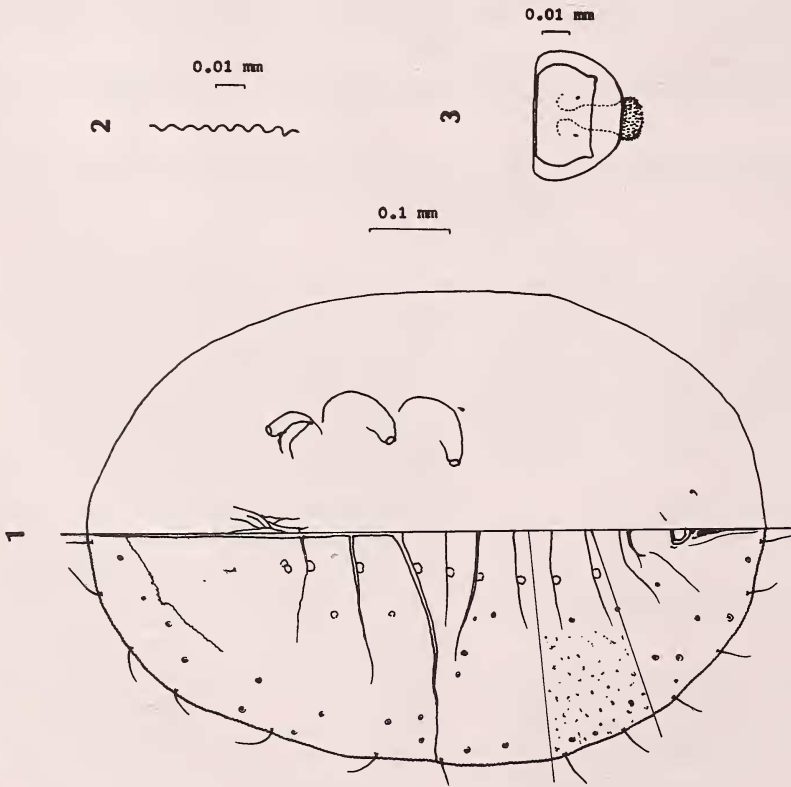
Dorsal surface: Paired cephalic setae, minute, 7.9 microns long, paired eighth abdominal setae of the same length and paired caudal setae 80 microns long. 12 pairs of submarginal setae, 6 in the cephalothorax and 6 in the abdomen, 40-58.75 microns long. Submargin and subdor-

sum with sparsely distributed pores. Lateral depressions present in the median area of abdominal segments, a pair each on transverse moulting suture, first to sixth abdominal segment sutures and meso- and metathoracic sutures. Abdominal segment sutures distinct, except for first abdominal segment suture. Second abdominal segment suture more prominent than the other abdominal segment sutures. Seventh abdominal segment suture runs downwards and is reduced to pockets. Longitudinal and transverse moulting sutures reaching margin. Cephalothorax 380 microns and abdomen 460 microns long. Pores and granules evident on the submargin and subdorsal regions. First abdominal segment longest, 57.5 microns, succeeded by eighth abdominal segment 50 microns long, third and fourth abdominal segments 48.75 microns long. Abdominal segment three of the same length. Abdominal segments five, six and seven measuring respectively 45, 42.4 and 7.5 microns long.

Vasiform orifice rectangular shaped, wider than



Setaleyrodes takahashia Singh
Fig. 4. Pupal case; 5. Margin; 6. Vasiform orifice.



Peatius kalawi Singh
Fig. 1. Pupal case; 2. Margin; 3. Vasiform orifice.

long, 27.5 microns long and 42.5 microns wide. Operculum similarly shaped, 17.5 microns long and 25 microns wide. Lingula 'D' shaped, extending beyond vasiform orifice, setose. Caudal furrow tassellated, broad at base of vasiform orifice which gets narrowed at posterior end, 88.75 microns long.

Ventral surface: Legs distinct, antennae nearly reaching base of prothoracic legs, paired ventral abdominal setae 17.5 microns long and 37.5 microns apart. Spiracles and mouth parts contiguous.

Host: *Laurus* sp. (Singh 1933)

Material examined: 2 pupal cases on slide labelled 'Pealius kalawi Singh, on *Laurus* sp., Burma, K. Singh, 4598/H7'.

Setaleyrodes takahashia Singh, 1933 (Figs. 4-6)

Pupal case: White, elongate, measuring 0.800 mm long and 0.200 mm wide.

Margin: Irregularly crenate with 8-9 crenations in 0.1 mm; anterior and posterior marginal setae not discernible; thoracic pores, combs and teeth absent.

Dorsal surface: Submargin with seven pairs of setae arising on tubercles—3 in the cephalic region, 3 in the caudal region and a pair laterad of fourth abdominal segment 92.5 - 120 microns long. Submargin and subdorsum with intense granulations. Median tubercles evident on abdominal segments 1 - 5. Pro-meso and meso-meta thoracic sutures distinct. Abdominal segments with

rhachis. Dorsal setae not discernible. Longitudinal and transverse moulting sutures reaching margin. Sixth, seventh and eighth abdominal segments respectively 55, 35 and 10 microns long.

Vasiform orifice subquadrate shaped, longer than wide, 50 microns long and 40 microns wide; operculum similarly shaped, as long as wide, 25 microns long; lingula setose and protruding beyond operculum. Caudal furrow 62.5 microns long with characteristic hexagonal granules.

Ventral surface: Thoracic and caudal tracheal folds absent; paired ventral abdominal setae on sixth abdominal segment region, 22.5 microns long and 32.5 microns apart. Antennae not discernible. Mouth parts and legs distinct.

Host: *Streblus asper* (Singh 1933)

Material examined: 1 pupal case on slide labelled '*Setaleyrodes takahashia* on *Streblus asper*, 12.7.1930, K. Singh, 4595/H7'

ACKNOWLEDGEMENTS

Thanks are due to the Zoological Survey of India, Calcutta, for loan of the aleyrodid specimens and to the Indian Council for Agricultural Research for financial assistance.

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October 8, 1987.

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33. A STUDY OF SOME LITTLE KNOWN CHALCID WASPS (HYMENOPTERA: CHALCIDOIDEA)

(With six text-figures)

The species *Brachymeria madagascariensis* (Chalcididae) was originally described by Kieffer (1904) as the type-species of a new genus *Holochalcis* described by him. One of us (T.C.N.) examined the homotype of this species (obtained from the Museum National d'Histoire Naturelle, Paris) and found that the genus *Holochalcis* Kieffer is synonymous with the genus *Brachymeria* Westwood (Narendran 1987). Since the available description of *Brachymeria madagascariensis* (Kieffer) is quite inadequate for the recognition of the species, a redescription is provided here.

Until recently, Philomidinae was placed under Perilampidae. Boucek (1978) stated that 'Philomidinae seem to be placed best as a subfamily of Eucharitidae'. Narendran (1985, 1986) therefore placed the Philomidinae under Eucharitidae. Since Ayyar (1925)

recorded an undetermined species of *Philomides* Haliday from India, no further report has been made of the genus from the Indian subcontinent. In this paper we record for the first time the species *Philomides paphius* Haliday from the Indian subcontinent (from Bangalore). Since the earlier descriptions of this species are not sufficient for easy identification, a redescription of the species is provided.

The four little known genera of the family Chalcididae, namely *Tainaniella* Masi, *Aspirhina* Kirby, *Xyphorachidia* Steffan and *Trichoxenia* Kirby share many common features and therefore look very similar, especially in having the apex of the scutellum prolonged posteriorly into a single stout structure. Students of Chalcididae who have not seen these genera may find difficulty in separating these genera with the help of already published information, which does not give any substan-